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ABSTRACT

This report describes the school-business partnerships that have contributed to the success of the Galileo Center at Banded Peak School in Bragg Creek, Alberta, in its first full year of operation. It summarizes partnership activities and initiatives that have been implemented in the school and suggests directions for future linkages. The need for joint evaluation of the outcomes of an educational partnership are discussed, as well as ways in which educators and stakeholders can work together for the assessment of partnerships. The Galileo Center stresses the advancement of teaching practices by providing a working professional development school as a site for educational innovation, research, and technology. The center works to improve student learning and cultivate excellence in teaching by: (1) establishing a safe, caring community of inquiry; (2) encouraging teachers to develop innovative practices, share expertise, and collaborate with others; (3) conducting research and applying research; and (4) by fully realizing the leverage of technology on education. (Contains 12 references.) (DFR)

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# A Report on Educational Partnerships Supporting the Galileo Centre at Banded Peak School in Rocky View School Division

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**Abstract**: In this report about educational partnerships in Rocky View School Division, we report on the school-business partnerships that have contributed to the success of the Galileo Centre at Banded Peak School in Bragg Creek, Alberta in its first full year of operation. This report summarizes partnership activities and initiatives that have been implemented in the school, and suggests directions for future linkages. The need for joint evaluation of the outcomes of an educational partnership will also be discussed, and ways in which educators and stakeholders can work together for the assessment of the partnership are described.

## An Introduction to the Galileo Centre

The Galileo Centre is a dynamic example of how educational partnerships have the potential to benefit students, schools and the community in innovative and valuable ways. The Galileo Centre (http://www.rockyview.ab.ca/bpeak/galileo.html) is an Alberta-wide professional development center designed to advance teaching practice and improve student learning. The Centre, a Rocky View School Division (RVSD) (http://www.rockyview.ab.ca) initiative, is located in the newly constructed Banded Peak School (http://www.rockyview.ab.ca/bpeak) in Bragg Creek, Alberta. This paper reports on the work-in-progress in the school's first full year of operation, 1997 - 1998, and summarizes some of the educational partnership activities and initiatives that have been implemented at Banded Peak School.

The Galileo Centre is a grassroots initiative that was brought to life as a result of conversations about educational reform among teachers and parents in response to news that RVSD had received funding for a new school. The original concept for the Galileo Centre came from a model developed by the Harvard Business school, which brings successful business people together for a time to work and study collaboratively, and then returns these individuals to their companies with new knowledge and methods to share. Approval for a parallel application of this model for educational innovation and reform was granted and seed funding allocated by RVSD. A development team of stakeholders, including educators, business and community representatives, worked for three years to develop the concept and perform due diligence in order to bring the vision of a professional development center to life.

In its first full school year, Banded Peak School operated with 393 students in grades K-6 in the 1997/98 school year, and grew to include Grade 7 in 1998/1999. Banded Peak School will grow to include Grade 8 in 1999/2000. The first new school to be built in Bragg Creek in decades, Banded Peak School has been called "the elementary school of the future" by Tom Keenan, an educational futurist and University of Calgary Professor (Heidt, 1997). Those who designed the school broke many of the tradition models of "what school looks like" as they planned for the education of the future. For example, students have free access to the school's 40+ computers, which are arranged on islands in the hallways and in the Information and Discovery Centre rather than in locked labs. Students can access the Internet and "adult" applications such as Microsoft Office97 and HyperStudio from any computer in the school, including the one in each classroom; truly "anytime, anywhere" access (Daniel, 1997).

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On any one day, visitors to the school might observe grade 5 students downloading images from the school's digital camera, grade 4 students dissecting a cow's eyeball, and grade 2 students working on their multimedia portfolios. At other times, visitors may catch grade 3 students creating graphs and charts using a spreadsheet program, grade 6 students practicing a Celtic dance or authoring their web-pages, grade 1 students writing about bears, and kindergarten doing action art in the spirit of Jackson Pollock. What may first appear to be chaos to some is actually a beautifully orchestrated symphony of elementary aged children using a variety of instruments to write, create, author, examine, and communicate their powerful ideas.

## Purpose of Galileo Centre

The Galileo Centre is committed to the advancement of teaching practice by providing a working Professional Development School as a site for educational innovation, research, and the effective use of technology. The mission of Galileo Centre is to improve student learning and cultivate excellence in teaching by:

- establishing a safe, caring community of inquiry;
- encouraging teachers to develop innovative practices, share expertise, and collaborate with others;
- conducting research and applying research;
- fully realizing the leverage of technology on education.

The Galileo Centre focuses on addressing the current professional development gap between access to technology and actively exploiting the educational potential of technology. One way the Galileo Centre accomplishes their professional development mandate is by providing Alberta teachers, selected from schools across the province, with an opportunity to integrate technology into their daily teaching practices while participating in a one year collaborative teaching and learning experience in Banded Peak School. Through the Galileo Centre, participating educators actively teach students for part of their paid time and invest the remainder of their paid time in activities such as intense collaboration with experts and colleagues, providing in-service training, acquiring new skills, and conducting research. For example, Galileo Centre's first project teacher worked with two other teachers to explore project-based teaching and learning, as well as working with other teachers to integrate technology in their classrooms. Galileo Centre's second project teacher worked with four Banded Peak teachers on ways to integrate technology into the curriculum, played a pivotal role in the development of the S.T.A.R.s Mentorship program with IKON, which will be described in detail in a subsequent section, and learned how to approach web page design with children. At the conclusion of their Galileo Centre experience, educators return to their respective school districts to provide leadership and share their expertise with other educators, implement strategies and methods of utilizing technology and innovative teaching practice, and operate as part of the critical mass that the Centre aims to develop in the province of Alberta.

## The Four Pillars of Galileo Centre

An image on the Galileo website (http://www.rockyview.ab.ca/bpeak/research.html) is a powerful symbol of the work of teachers and researchers at the Galileo Centre. Originally displayed on the title page of Bacon's *Novum Organum*, the image portrays a ship sailing through the Pillars of Hercules. In Galileo's time, these pillars symbolized the limits of possible human exploration. The Latin inscription, taken from the Book of Daniel, means "Many will pass through and knowledge will be increased". The four pillars of the Galileo Centre are: 1) student learning, 2) professional development, 3) the effective use of technology, and 4) classroom-based research.

First and foremost, the work of the Galileo Centre aims to have a significant impact on improving **student learning**. Various projects are underway that permit students to explore aspects of mandated curricula such as mathematics, science and health in new and exciting ways, or to create new knowledge through collaboration with schools around the world via telecommunication. For example, the AT & T Asia Pacific Virtual Classroom projects (for example, Grade 2 in 1996/1997 http://www.rockyview.ab.ca/bpeak/edge/virtual.html, and Grade 6 in 1997/1998 http://www.vc97.attjens.co.jp/VC_06/INDEX.HTM) involve partnerships with industry and educators around the world to discover ways in which to foster global communication and understanding not only among children, but also among teachers and leaders in industry committed to finding new ways of working together. The 1996/1997 AT & T grade 2 project won in the elementary category, and the 1997/1998 grade 6 project was noted for its technical expertise and the sheer volume and quality of student writing and artwork.

A unique feature of the Galileo Centre is its commitment to improving teaching practice beyond the walls of Banded Peak School. Project teachers will take an enriched knowledge and skills base back to their own school districts, as well as remain part of the communication network established by the Galileo Centre. Other outreach initiatives that contain strategies for **professional development** and the dissemination of knowledge as part of their design include Banded Peak faculty teaching university-level courses on site for educators from different school districts, sharing teaching and learning information at conferences, professional development days, and on our web-site, and establishing partnerships with teachers and students from other schools to pursue collaborative projects.

Those who pursue the Galileo Centre mission are committed to a systematic investigation of the **power of technology** to change and enhance classroom practice. One strategy that has proven successful to diffuse technology skills throughout the school has been to pair older students with younger ones for computer work. For example, one class of grade 1 students completed shared work with their grade 5 computer buddies throughout the year. Inquiry is focused on how changed educational practice, which integrates a significant technological component, advances student learning and enhances teacher development. Recent research emphasis has been on the fundamental changes to teaching practice that integrating technology appears to both enable and require of teachers and learners, rather than investigating technology as merely an add-on to current practice (Clifford, Friesen, & Jacobsen, 1998). Questions include "what happens when you put adult tools, such as Microsoft Office, in the hands of children?", and several investigations are examining the use of various technologies for writing, research, and communication.

In partnership with The University of Calgary, the Galileo Centre is committed to bridging the gap between educational theory and teaching practice with the development of new knowledge about teaching and learning through **classroom-based research**. We want to emphasize that Banded Peak is not about technology for technology's sake (Clifford & Friesen, 1996). Instead, research projects contribute to advancing understanding about significant issues in teaching, learning and professional development. In emphasizing educational innovation, the Centre is committed to a view of teaching and learning that moves beyond the previous paradigms of curriculum delivery or behaviorism. Investigation focuses on ways in which learning and intelligence arise and develop from individuals' active engagement with their environment: other people, print and non-print sources of knowledge, the Internet, artifacts, structured investigations, and the various tools with which individuals complete their work, both technical and non-technical. Classrooms and schools are seen as knowledge-building communities that grow and develop through the collaborative construction of meaning. The stewardship of these knowledge-building communities is an issue both of teaching practice and of educational research. To this end, the Galileo Fellowship has been established to facilitate sustained and significant cooperation between teachers, the University of Calgary, and a doctoral student committed to the Galileo Centre research program. As educators think about the role of technology in educational reform, it is particularly important to conduct research that investigates the impact on students' and teachers' increased ability not only to share ideas with one another, but also to collaborate across boundaries of time and space to design and construct meaningful projects. Interested readers are encouraged to learn more about the Galileo Centre by visiting our extensive web site (http://www.rockyview.ab.ca/bpeak/galileo.html).

## Galileo Centre Educational Partnerships

The Galileo Centre is a collaborative undertaking, which is firmly based on mutually beneficial educational partnerships. The Centre's educational partners have contributed valuable human resources of time and expertise, as well as some financial and equipment resources to support the Galileo mission. Business and community partners have been instrumental in the development of the Galileo Business Plan, especially in the areas of accountability processes, stakeholder analysis, and technology implementation. Many of the Centre's partnerships have been instigated by Brant Parker, the principal of Banded Peak School. Mr. Parker has worked tirelessly to promote the Galileo Centre's mission, and his eagerness to involve others in innovative ways has attracted many people and organizations to becoming involved and adding value to the school. Subsequent sections describe the nature of the on-going educational partnerships between the Galileo Centre and our partners, and report briefly on the resulting mutual benefits. In all of our educational partnerships, the central ingredient is a direct and measurable learning benefit to our students and other learners.

## The Faculty of Education at the University of Calgary

Galileo Centre's partnership with the Faculty of Education at the University of Calgary has afforded teachers rich opportunities to collaborate with faculty and graduate students in order to improve student learning, conduct classroom-based research, integrate technology, and increase professional development opportunities. Our academic partnership agreement with the University of Calgary includes the Galileo Doctoral Fellowship, enhanced links with Education faculty in order to bridge educational theory and practice, and increased opportunities for preservice teacher's professional development in an innovative and dynamic setting.

Through our partnership with the University of Calgary, Banded Peak Galileo Centre staff are able to pursue graduate work and obtain credit for research and curriculum development. Our first project teacher from High Level, Alberta, is working towards a masters degree with the Faculty of Education (http://external.educ.ucalgary.ca) at the University of Calgary. Our second project teacher, from the Calgary Board of Education (http://cbe.ab.ca), has been accepted into the graduate program at the University of Calgary. A number of core teachers at Banded Peak are also pursuing graduate work that is related to Galileo Centre initiatives. For example, Banded Peak's resource specialist recently completed a masters degree that included research on various aspects of the Galileo Centre, a grade four teacher is working towards a masters degree, and a grade six teacher is completing a dual doctoral program in math and education, all through the University of Calgary.

The Galileo Centre has established and funded an annual Doctoral Fellowship as a result of their partnership with the University of Calgary and the Gallagher Education Foundation. The first Galileo Fellow's role in the school has included three overlapping responsibilities: those of researcher, professional development resource, and a liaison with the University of Calgary. The first Galileo Fellow's role evolved over the year in order to be responsive to current needs and emerging initiatives. The Galileo Fellow's research role involved discussions with teachers about research design and methodology, conducting an investigation of emergent literacy and hypermedia with two grade 6 teachers, examining the nature of undergraduate student and practicing teacher relationships, extending her dissertation research, and meeting with internationally acclaimed educational reformers. The Galileo Fellow worked with two teachers and the assistant principal to evaluate a new progress reporting system that is being piloted with one grade five and one grade three class, and has also written or co-written scholarly papers for presentation at national conferences or publication in academic journals, and is currently developing a research project with the school principal to investigate the nature of teacher experiences in the school this year.

Throughout the first year, the Galileo Fellow worked both one-on-one or with groups of teachers to integrate technology in their classrooms, arranged for volunteer relationships between preservice and inservice teachers in order to build a critical mass of technology knowledge and skills, conducted tours of the school with various academic groups, and presented information about the Galileo Centre and technology at professional development days, conferences, and at the University. To encourage active and working relationships between Banded Peak faculty and academic staff from the university, the Galileo Fellow invited faculty from the Faculty of Education to the school for tours and to work with individual teachers and groups, and actively participated and contributed to planning and steering committees.

University of Calgary faculty, graduate, and undergraduate students are involved in ongoing research and professional development at Galileo Centre. The school is fortunate to have built a relationship with a second doctoral student from education, who conducted his dissertation research with a grade five class to investigating the nature of hypermedia and literacy. This individual has worked extensively with on-line methods of reading and responding to literature, and has become a valuable resource for the school. Students also benefit from the involvement of Dr. David Jardine, University of Calgary Professor, who has worked extensively with the grade 6 students and their teachers. This work will continue for the next three years as part of a recently funded Social Sciences and Humanities Research Council of Canada grant concerned with re-thinking the idea of "basics" in elementary education (Jardine, LeGrange, Clifford, & Friesen, 1998). In the 1998/1999 school year, Dr. Jardine will also be supervising several pre-service teachers in the school as part of the new Master in Teaching program in the Faculty of Education. Dr. Jardine's research methodology using interpretive inquiry mirrors the approach that the grade 6 teachers use in their teaching and learning, and the approach to learning that the teachers actively encourage in their students (Clifford & Friesen, 1993). This affinity between the work of research, teaching and learning provides an image of school-university collaboration that is quite different from simply treating the school as a drop-in research site and the students as anonymous subjects.

A mutually beneficial volunteer partnership between Banded Peak teachers and undergraduate students has contributed to the school's critical mass of technology expertise. Three undergraduate education students, who have a high level of technology skill, have been volunteering with teachers and students throughout the year to share their knowledge and skills. For example, one student has been working with a grade 4 class to create an Alternative Energy project web site (http://www.rockyview.ab.ca/bpeak/classact/mcclure/energy.html#MAKING) that brings together group projects and artwork. Another undergraduate student helped the grade 3 classes to build a web site on Banded Peak School's Intranet, or internal, web site. A third undergraduate student supported grade 2 students as they added sound and visuals to their multimedia portfolios. Overall, the undergraduate volunteers' contribution has been a mutually beneficial partnership between the university and Galileo Centre; undergraduates benefit from authentic teaching and learning experiences in the school, and teachers and students benefit from having access to the undergraduate's technology expertise.

## The Gallagher Educational Foundation

The Gallagher Educational Foundation has been part of the Galileo Centre development team from the very beginning. They have provided leadership in the development of a five-year business plan, seed funding for 1996/1997 pilots, and 1997/98 initiatives, additional funding for a broad review of educational research and visits to other sites of educational excellence, have participated in the development of a detailed accountability framework, and continue to provide leadership in approaching local business and community organizations for involvement. Additional benefits of the Gallagher Education Foundation's educational partnership with Banded Peak Galileo Centre include the contribution of the Galileo Fellow, leadership on the Galileo Advisory Council, and the building of the Galileo Room, a found space above the gymnasium where individuals can gather to build on the Galileo Mission.

## Galileo Centre Advisory Council

The purpose of the Galileo Centre Advisory Council is to advise Banded Peak School staff and the superintendent of RVSD regarding ongoing development and implementation of the Galileo Mission. Reports and plans will become publicly accessible and are in alignment with Alberta Education's Three Year Plan, RVSD's Three Year Plan and school policies. This Council is in addition to the School Council which operates much the same as other School Councils throughout Alberta. The Advisory Council membership is approximately half business and community representatives and half RVSD representatives. Membership includes: the Chair of the Banded Peak School Council, a partner from the Gallagher Educational Foundation, the Dean of the Faculty of Education at the University of Calgary, the Calgary Marketplace President from IKON Office Solutions, a professional accountant, RVSD's Superintendent of Schools, the Director of Human Resources Partnerships coordinator, the Assistant Director of Technology in RVSD, the Banded Peak School Principal, a class room teacher, and a member of the local ATA executive. This Council meets a minimum of each month and provides invaluable expertise in advancing the Galileo mission.

## IKON Office Solutions http://www.ikon.com

The Galileo Centre has a multi-level educational partnership with IKON Office Solutions which has resulted in many benefits to students and business staff. IKON has supported the Galileo mission from the beginning, and has provided support for professional development with financial assistance for conference attendance, volunteered knowledge and expertise for technology training of staff and students, has piloted new technologies in Galileo Centre, and IKON Canada also displays student art work from three Rocky View schools in their National head office, in Calgary. IKON believes that their employees and company benefit from the partnership with Galileo by learning more about the education process and educators' needs which will increase their ability to be responsive to and apply technological solutions to the education market. In addition, IKON Office Solutions are partnered with another RVSD school, Edwards Elementary in Airdrie, Alberta.

The most valuable benefit of our partnership with IKON is the synergy created when business and schools work together to increase learning opportunities for children. For example, two IKON employees worked with the school's second project teacher to develop a technology training program to develop student experts who will lead technology integration efforts in the school. The **S**tudent **T**echnology **A**ssistant and **R**esource (S.T.A.R.) Mentorship

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program is a collaborative effort between IKON and the Galileo Centre that focuses on developing students' technology, mentoring, leadership, and problem solving skills. The S.T.A.R. Mentorship program's mission is to use a "bottom-up" professional development model (see Hruskocy, Ertmer, Johnson, & Cennamo, 1997) with elementary students in order to increase the critical mass of technological expertise at Banded Peak. Interested students from division 2 (i.e., grades 4, 5, and 6) complete an application form that includes a personal statement of intent and supporting references from parents and their teacher. During the May-June 1998 pilot stage of the program, 15 students in grades 4, 5, and 6 were trained by IKON's professional services staff in such areas as file management, advanced applications skills, and trouble-shooting. The 15 S.T.A.R.s trained during this first phase received certification, and then became responsible for training and coaching two students from division one (i.e., grades 1, 2, or 3). One of the projected outcomes for S.T.A.R.s who complete the first phase is to also write a training manual that can be used as a resource throughout the school. The S.T.A.R. Mentorship program will result in 45 Banded Peak students who will provide leadership and technology support throughout the school and become an integral component of the professional development mission of Galileo Centre.

## Alberta Education (http://ednet.edc.gov.ab.ca)

Alberta Education provided support for the initial concept, participated on the Galileo Development Team, and now participate as a representative on the Galileo Centre Advisory Council. Further involvement by Alberta Education is under development.

## Calgary Regional Professional Development Consortium

The educational partnership between the Calgary Regional Professional Development Consortium and the Galileo Centre has enabled Banded Peak School to offer sustained professional development to teachers from a number of school jurisdictions. Over a period of four months, two Banded Peak teachers instructed a University Educational Inservice (EDIS) quarter course at the school. The Consortium advertised the course, processed applications, and provided substitute teaching time so that course participants could meet at the school. Fifteen educators from 7 different school jurisdictions, both private and public, participated in the course and continue to provide leadership for Alberta Education technology through various integration initiatives with the Calgary Regional Professional Development Consortium. Jan Vandenbos, from Bloodhounds International Inc., established a list server for class participants to exchange ideas. The evaluations were so positive from this pilot course that Galileo Centre also offered a 600 level course to Banded Peak teachers in partnership with the University of Calgary.

In partnership with the Calgary Regional Professional Development Consortium, two Banded Peak teachers offered a Summer Institute from August 17 to 19, 1998 at Banded Peak School on Integrating Technology with Alberta Curricula. The goal was to develop a core of fifty technology facilitators from across the province who will develop a mentorship model to work with 2 to 3 other teachers in their own schools. Facilitators developed "Units of Integration Practice" to be used as models for teachers on how to integrate technology into the curriculum, as well as for publication on the Banded Peak/Galileo Centre Internet site. Plans are also underway to offer four similar institutes throughout the 1998/1999 academic year.

## Bloodhounds International Inc. (www.imaxx.net/bh)

A computer network security investigator and engineer with Bloodhounds International Inc. donates his time and expertise to the school and teachers to design, install and administer the network at Banded Peak School/Galileo Centre. Mr. Vandenbos and his staff continue to offer advice, time and expertise as we begin to implement new levels of interactivity over the servers. Mr. Vandenbos gets personal satisfaction out of feeling that he is having a positive effect and making a contribution to the school's operation, as well as being a part of an initiative that he feels is aligned with the future directions of education and business. He also believes he benefits from the profile and recognition he receives through links on the school's internet site, and recognition at events like the Calgary Educational Partnerships Awards. Banded Peak teachers and students benefit daily from the robustness of the network, which is rarely - if ever - down, and the amount of interactivity and access the network can support.

## SMART Technologies (http://www.smarttech.com)

SMART Technologies has provided the school and the Galileo Centre with the use of two SMART Boards™, which are touch sensitive, interactive whiteboards used in conjunction with a projector, for a one year term. When the SMART Boards™ were first introduced to the school, SMART Technologies conducted training sessions for Banded Peak School students and staff. Galileo Centre staff are monitoring and assessing the impact of this new technology on teaching and learning as part of their ongoing research. It is so important for teachers to be able to model and demonstrate technologies to the entire class as they integrate various tools into the curriculum. Teachers have used the SMART Boards™ to project collaborative projects with other schools for the entire class, demonstrate search techniques for the World Wide Web, lead group poetry composition, and to teach students how to author with HyperStudio. Students have been able to use the SMART Boards™ to share their writing and presentations with their classmates. The Galileo Centre continues to explore new possibilities for partnership development with SMART Technologies. For example, the SMARTer Kids project proposes to link children across Canada and internationally to pursue collaborative projects in a virtual environment, and teachers and students from Banded Peak want to be one of the first classrooms involved in this initiative.

## Alberta Environmental Protection (http://www.gov.ab.ca/~env/)

A variety of mutually beneficial projects are under development between the Galileo Centre and Alberta Environmental Protection (AEP). AEP staff have conducted a professional development day for Banded Peak staff to familiarize them with the immediate ecosystem and vegetation, during which they demonstrated ways to integrate the adjacent environment into everyday teaching and learning. As reported in Part 1 of this paper, a grade 5 class became "Bow Habitat Field Station #1" when they became one of six Alberta classes to pilot the FINS: Fish In School's project. As a result of their research, students have given oral presentations to students, teachers, and other visitors to the school, written newsletters for parents, created many web-based FINS resources http://www.rockyview.ab.ca/bpeak/edge.html for others to view and respond to, kept daily science journals, conducted water quality tests for saturated oxygen and ammonia levels, and successfully raised 103 healthy rainbow trout to the fingerling, or release, stage. The students released their trout on May 11, 1998 at Mount Lorette Pond in the Kananaskis. As a result of their successful partnership with Alberta Environmental Protection, this grade five class was invited to a special pancake breakfast at Sam Livingston Fish Hatchery to receive a certificate and to showcase their FINS project.

## Alberta Teachers Association Local #35

The A. T. A. has provided support for the concept and participated on the Galileo Development Team and Advisory Council from the beginning of the project.

## $MC^2$ Learning Systems Inc. (http://www.mc2.sfu.ca)

$MC^2$ staff have provided inservice training to Banded Peak staff, and have encouraged connections between teaching staff and Simon Fraser University, B.C., faculty. Several teachers and their students are using ZEBU, an interactive web authoring tool developed by $MC^2$, to post their writing and give others the opportunity to respond to their work. The use of such hypermedia tools is the subject of a doctoral dissertation research project with grade five.

## Community Connections

The following section provides a brief overview of Banded Peak Galileo Centre community connections and other partnership activities that promote civic responsibility and good citizenship, leadership and volunteer opportunities, and increase contacts for students with diverse members of their community, including artists, musicians, business people, community activists, university professors, and government employees.

Banded Peak School is located on 41 acres of forest at the foot of the Rocky Mountains, and the school is fortunate to have local area experts who contribute their unique understanding of the Bragg Creek area to the school.

Individuals from Alberta Environment Protection have conducted many classroom presentations in the school, including a forensic science exhibition, bringing in the head of a wolf recently executed by a local rancher, and sharing models that explain the anatomy of snow avalanches. Local artisans have worked with the entire school volunteers to create a ceramic mosaic of the Banded Peak Mountain (the school's name sake). Each student and staff member created an individually designed ceramic tile, which were later fashioned into a beautiful mural representing our school community and namesake. Visitors can see our ceramic mountain prominently displayed in the student meeting area. This same group of artisans designed and painted the school's climbing wall, which was funded and installed through volunteer community efforts.

Banded Peak's resource teacher has built meaningful connections with parents in the community who volunteer in the school and have contributed to a library of resources about various types of special needs. The Parent Group also provides family support, information, and a liaison for parents with a special needs student. Many of our teachers have also built relationships with the surrounding community through classroom investigations and visits to Bragg Creek. For example, a grade 2 class hiked to Bragg Creek and interviewed local residents and business operators as part of their collaborative study of the community. The results of the students' research are posted on Banded Peak's Internet site along with that of their partner classroom in R.J. Hawkey School in Airdrie, Alberta.

Teachers actively pursue provincial, national, and international connections with other schools to extend our learning community. In addition to the A T & T Asia Pacific projects, many of our teachers have made learning links with classes elsewhere in the world. The teachers of two grade 3 classes have been corresponding with Leo Ussak Elementary School in Rankin Inlet, N. W. T., to exchange community information and artifacts. A grade 2 class wrote a collaborative story with drawings on the Internet with a grade 5 class in Australia (http://www.rockyview.ab.ca/bpeak/classact/grade2/heather.html), and a grade 1/2 class exchanged e-mail about their respective countries with penpals at Healsville Primary School, Healsville, Victoria, Australia.

The Wildhorse Theatre Company, completely operated by grade 2 students, grew out of a four month project-based investigation of Celtic mythology and the support of community partnerships. As a part of their research on Celtic myths, a grade two class located a Celtic artist through the Internet, who visited the class and demonstrated her Celtic knotwork. The grade 2 teacher invited a choreographer from Dance Debut Studio in Cochrane, to demonstrate Celtic dance to the class, and this individual also offered an extra curricular Celtic dance class over noon hours for a two-month period for the entire school, and stayed twice to give extensive Celtic exhibits. This grade two class decided that one of the products of their research would be to perform their retelling of the Dream of Aengus (Findon, 1994). The choreographer watched the students' performance and gave them some very professional feedback. The students decided they wanted to be real performers with no parents or teachers helping from the sidelines. Their teacher met with an individual who is responsible for tours and programs at the Jubilee Auditorium, and arranged for a pilot day-long excursion to tour the back stage of ShowBoat. The grade two students were the only people in Western Canada to have the exciting opportunity to interview the costume, wig, set and lighting stage crew. The students shared their questions and concerns regarding performing for a large audience and received some professional advice from real theatre people.

What had originally started out as a 20-minute dance for parents, was transformed by the students into the development of their own theatre company, The Wildhorse Theatre Company, and a 45-minute, student written, student choreographed, entirely student directed performance. The teacher arranged for the entire school to see the performance. The 6 and 7 year olds, who wrote the script, built the sets, did their own set changes, costume changes, and wrote their acting biographies, wowed their audiences with an extremely professional production. From a prior performance by Quest Theatre, the students learned the practice of answering audience questions following a performance. After their performances, the grade two actors and crew from the Wildhorse Theatre Company elegantly demonstrated their knowledge of Celtic mythology and of all the ingredients that went into a successful theatre production. An individual from the Jubilee Auditorium, and the choreographer from Dance Debut Studio, attended the student performance and spoke with the children afterwards. Recalling the most pressing concerns the students had raised, the Jubilee representative praised the students for overcoming their fears and indeed become truly professional performers. Through links with the community, and the support of their teacher, the students learned authentic knowledge and skills from the experts, and put together a remarkable production.

## Benefits Realized by the work of Galileo Centre

The operation of the Galileo Centre would not be possible without educational partnerships. Galileo Centre is developing new visions of educational possibilities for the 21st century. The essential ingredient of any educational partnership is improved student learning and performance, which can be accomplished through innovative teaching and learning practices. In January 1998, the Galileo Centre and their partners were honored for their business-education partnership with the **1998 Excellence Award in Professional Development** by the Calgary Educational Partnership Foundation (http://www.calg-edu-part-fnd.com). This award recognizes topnotch collaborative work done for the benefit of students.

Galileo Centre staff are working to measure, document and disseminate the impact of the Centre and its partnerships on student learning and professional development of the Centre to other Alberta and Canadian schools. A hands-on strategy for sharing knowledge with the community includes opening the school to tours by educators and other members of the community. Sixty-one groups from the educational community have toured Banded Peak and have spent time discussing the Galileo Centre's mission and initiatives, as well as educational theory and practice with teachers and students. Visitors have been able to observe students at work, and ask them questions about their current projects. Banded Peak students have increased opportunities to showcase and defend their work with a variety of adult visitors, from other teachers to university professors and business partners. Some tours have provided new opportunities for educational partnerships and collaboration. For example, twelve academics and educators from Rice University in Houston, Texas, toured Banded Peak, talked to students, and participated in several hours of discussion with staff. As a result of their visit, they wanted to arrange for a teacher exchange, and other collaborations, with schools in their districts.

Banded Peak School and The Galileo Centre aim to develop more independent, creative, critically thinking, teamwork oriented, and technologically adept students. One of the ways that the school and the Centre share the results of their efforts is through the extensive and resource rich web site that has been created by teachers and students. Since March 1997, thousands of visitors have linked to the Banded Peak School website (http://www.rockyview.ab.ca/bpeak), and have had access to the huge variety of teacher and student work and progress reports on-line.

## Concluding Remarks: Evaluating Partnerships

As part of the planning process at the beginning of an educational partnership, it is important to include emphasis on the measurement of outcomes, benefits, successes, and to use these learned lessons for future planning. Before partners begin their formal relationship, they should plan for how they will define success at the end of each academic year. An evaluation process or instrument need not be complicated. In fact, it is important not to make the evaluation process an onerous one. Both school and business people will shy away from a lengthy and time-consuming evaluation. Some businesses have some basic questions they want answered at the end of a partnership: 1) Did the partnership contribute educationally to the students, 2) Is the community aware of the partnership, and has the community benefited in some way, and 3) Did the partnership contribute to the businesses objectives? More formal processes have been developed by the Conference Board of Canada that utilize value assessment as a decision-making tool to set objectives and assess how well programs achieve those objectives (see Bloom, 1993). Interested readers may want to review Otterbourg and Adams' (1991) in-depth and comprehensive publication about evaluating educational partnerships which includes a number of case studies about successful partnerships and their tools for measuring success.

Educators and stakeholders should work together to plan for the joint evaluation of educational partnerships. As a result of a RVSD partnership workshop that included members from the community, business partners, teachers, students, and parents, several guidelines for the evaluation of educational partnerships emerged. Individuals who are responsible for the partnership should meet annually to analyze the outcomes and value of the partnership. The following list of questions can form the foundation of an annual review of the educational partnership:

1. Stop/Start/Continue - What aspects of the partnership should be discontinued, become new initiatives, or carried on in the same manner?

2. What did you set out to do? (Goals)
3. Did you do it? (Evaluation) In whose opinion (i.e., teachers, students, business)?
4. Did you tell others about the partnership? (Communication) Did you take pictures? Pictures often form the basis for permanent partnership records and celebrations.
5. Did the partnership contribute educationally to students in the past year? How? Was there measurable benefit to children?
6. Was there community development? Is the community aware? Have they benefited? Are the students more aware of the larger community?
7. Did the partnership contribute to the businesses objectives?

Partnerships are often created and operated through the volunteer efforts of highly committed individuals (Bloom, 1995). Much of the success of educational partnerships is wrapped up in the individual champions. If the individuals involved do not take the time to document the process, successes, benefits, as well as the learned lessons, a partnership's sustainability may be vulnerable if and when key people move on. Many partnership practitioners believe that successful initiatives that had a positive impact on school improvement will automatically transfer and be replicated by other schools. Not so, say O'Connor and Allen (1996), who argue that many partnerships die due to lack of sharing and communication. It is important to document the partnership process, the benefits, and the outcomes, and communicate these to the larger stakeholder community. The best way to strengthen an educational partnership is to celebrate together the many benefits and outcomes for students, teachers, schools, business employees, and the community. Subsequent reports on the outcomes of educational partnerships at the Galileo Centre at Banded Peak School will continue to focus on these valuable learning benefits.

## Note

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